

## ON CERTAIN GENERA OF ATHERINE FISHES.

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The writer, with the cooperation of Mr. Carl L. Hubbs, has been engaged in a general review of the Atherinidæ of the world. The present paper contains preliminary notes on certain interesting forms, with figures of two American species.

### Genus *XENATHERINA*.

Under the name of *Menidia lisa*, Dr. Seth E. Meek,<sup>1</sup> has described from the streams of the State of Vera Cruz, a small Atherine fish

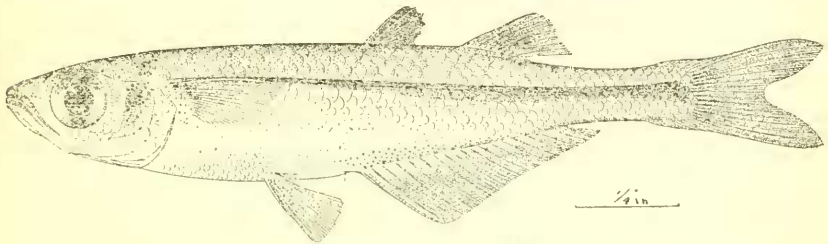


FIG. 1.—*XENATHERINA LISA* (MEEK).

showing certain remarkable traits. It has been made the type of a distinct genus by Mr. C. Tate Regan<sup>2</sup> under the name *Xenatherina*.

With a general resemblance to the American genus *Menidia*, it differs from all other Atherine fishes by having the anterior part of the body largely scaleless. Unlike *Menidia*, however, it has the rami of the lower jaw slender and not elevated behind, agreeing in this respect with *Hepsetia*. The jaws in *Xenatherina* are very slender and long, the belly is not compressed, and the pectoral fins are short and obtuse.

The squamation of *Xenatherina* has been carefully described by Mr. Carl L. Hubbs, from whose manuscript notes I take the following:

The caudal peduncle behind the middle of the second dorsal is covered with scales of moderate size, more or less crenate, there being about twenty-five

<sup>1</sup> Field Museum Zoology, ser. 5, p. 182, 1906.

<sup>2</sup> Biologia Centrali Americana, p. 64, 1906.

series behind the anus. From the caudal peduncle a rather wide band of scales extends forward along the middle of the sides disappearing on the trunk. Another band, narrowing anteriorly to a single series extends along the mid-dorsal line to the occiput. The belly, behind the ventral fins, is finely scaled. The remainder of the body is naked except for a few small nonimbricate scales most abundantly placed along the margin of the median scaly strip. The sides of the head are partially covered with scales which are scarcely imbricate.

I here present a figure of this species, taken from one of Doctor Meek's cotypes, from a stream at Refugio, Vera Cruz. This is now in the United States National Museum (Cat. No. 82178, U.S.N.M.). It differs from the specimen above described by Mr. Hubbs in the greater extension of the scaly area, the outer scales being imperfectly formed.

#### Genus HUBBESIA.

Another aberrant *Atherine* is a marine species from Panama, described by Jordan and Bollman,<sup>1</sup> under the name of *Menidia gilberti*. For this species I propose the generic name *Hubbesia*, in honor of

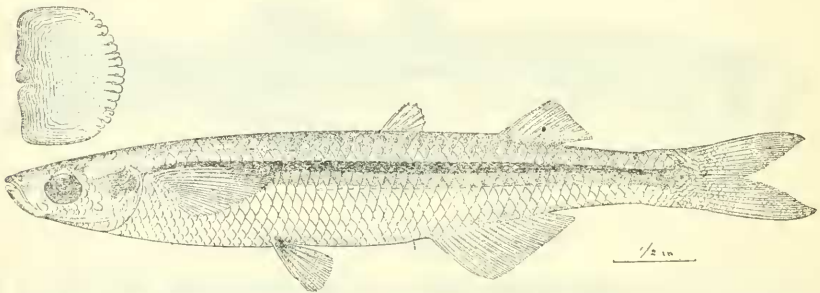


FIG. 2.—HUBBESIA GILBERTI (JORDAN AND BOLLMAN).

Mr. Carl L. Hubbs, a former student, now curator of fishes in the Field Museum. *Hubbesia* is intermediate between *Menidia* and *Membras* Bonaparte, 1836 (based on *Atherina martinica* Cuvier and Valenciennes; apparently includes *Kirtlandia*). It has the scales somewhat rough edged, almost as in *Membras*, but without circuli, the radii conspicuously developed on the exposed field. It differs from *Membras* (*Kirtlandia*) and agrees with *Menidia* in having the first dorsal inserted before the anal, and the soft dorsal and anal free from scales. The rami of the lower jaw, as in all related genera, are notably elevated at base.

#### Genus HEPSETIA.

The character of the form of the rami of the lower jaw is an important one in this group. It was first noticed by Mr. Henry W. Fowler, who based his subgenus *Atherinomorus*<sup>2</sup> on a species (*Atherina laticeps* Poey) which differs from the type of *Atherina*

<sup>1</sup> Proc. U. S. Nat. Mus., vol. 12, 1889, p. 155.

<sup>2</sup> Proc. Acad. Nat. Sci. Phila., 1903, p. 730.

(*A. hepsetus* Linnaeus) in having the rami slender, not elevated at base as usual in *Atherine* fishes.

It appears, however, that *Atherina boyeri* Risso, the type of Bonaparte's genus *Hepsetia*,<sup>1</sup> agrees with *Atherina laticeps* in this regard. The name *Hepsetia* must replace *Atherinomorus* and the genus is unquestionably valid.

The rami of the lower jaw are very slender behind in *Hepsetia*, *Eurystole*, *Xenatherina*, *Thyrina*, and in the Australian genus *Melanotaenia*. They are subtriangular in profile, being widened behind in all the species examined of *Protistius*, *Atherinopsis*, *Atherinops*, *Basilichthys*, *Austromenidia*, *Chirostoma*, *Menidia*, *Membras*, *Hubbesia*, *Leuresthes*, *Labidesthes*, *Thyrinops*, *Atherion*, *Atherina*, and *Atherinella*. The same form is described in *Ischnomembras* and *Phoxargyrea*.

In two genera an intermediate form appears, the rami being very slightly elevated at base. These are *Eslopsarum* and *Iso*.

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<sup>1</sup> Fauna Italica, 1836.